

### Metallized Polypropylene Film Capacitors

Type: **ECWH(A)**

Designed for high frequency and pluse applications.

#### ■ Features

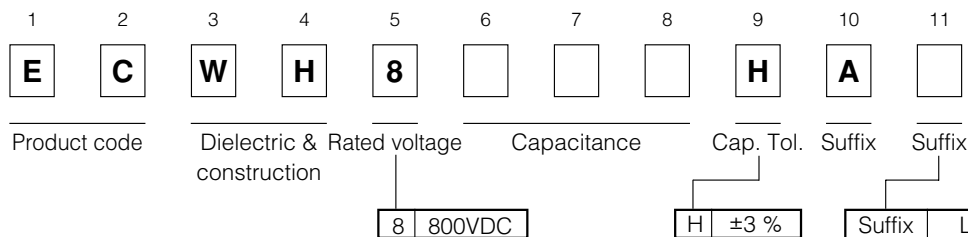
- Small size
- Excellent electrical characteristics
- Low loss
- Low Hum Sound Noise
- Flame-retardant epoxy resin coating
- RoHS directive compliant

#### ■ Recommended Applications

- Resonant circuit, Electronic ballast

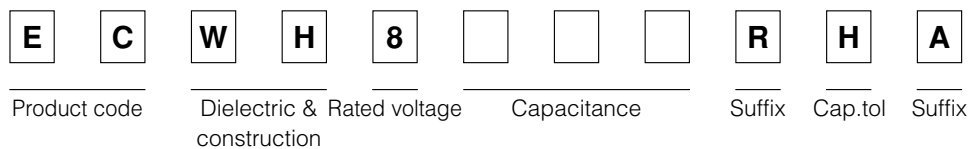
#### ■ Explanation of Part Numbers

- Explanation of Part Numbers (Rated voltage 800 VDC)

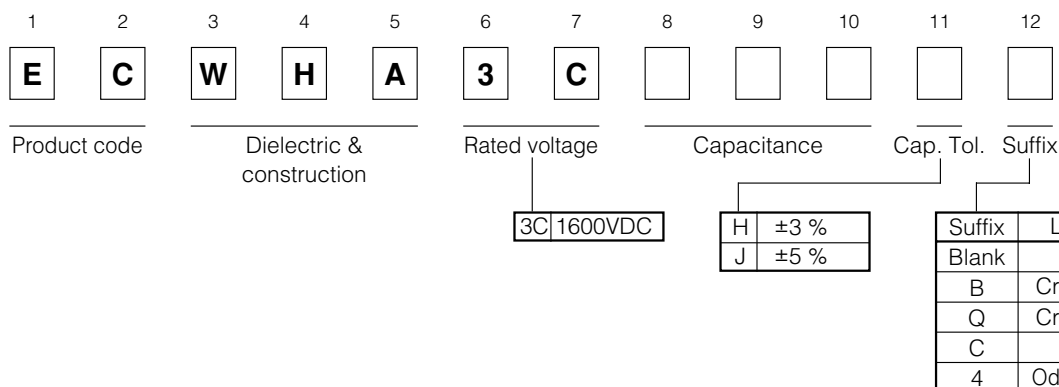


Suffix	Lead Form
Blank	Straight
B	Crimped lead
Q	Crimped lead
C	Cut lead

- Explanation of Part Numbers for Odd Size Taping (Rated voltage 800 VDC)



- Explanation of Part Numbers (Rated voltage 1600 VDC)



Suffix	Lead Form
Blank	Straight
B	Crimped lead
Q	Crimped lead
C	Cut lead
4	Odd size taping

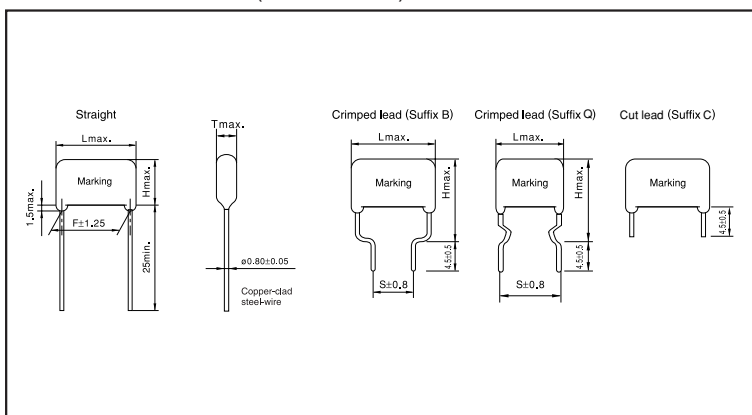
Metallized Film

### ■ Specifications

Category temp. range (Including temperature-rise on unit surface)	-40 °C to +105 °C	
Rated voltage	800 VDC	1600 VDC
Capacitance range	0.010 μF to 0.047 μF	0.0010 μF to 0.047 μF
Capacitance tolerance	±3 % (H)	±3 % (H), ±5 % (J)
Dissipation factor (tan δ)	tan δ ≤ 0.1 % (20°C, 1kHz)	
Withstand voltage	Between terminals : Rated volt. (VDC) × 150 % 60 s	
Insulation resistance (IR)	IR ≥ 30000 MΩ (20 °C, 500 VDC, 60 s)	

\* In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor with DC rated voltage, please refer to the page of "Permissible voltage (R.M.S) in alternating current corresponding to DC rated voltage".

### ■ Dimensions in mm (not to scale)

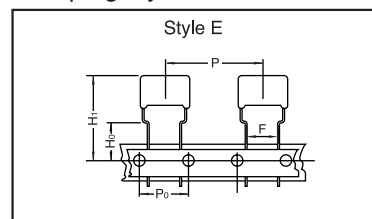


### ■ Packaging Specifications for Bulk Package

Packing quantity : 100 pcs./bag

### ■ Taping Specifications for Automatic Insertion

#### ● Taping style



\* Refer to the page of taping specifications.

### ● Packaging Specifications

Type	Rated volt.	Cap. range (μF)	Taping style					Packing	Suffix	
			AD	AS	B	C	D			E
ECWH(A)	800 VDC	0.010 to 0.047						○	Ammo	RHA
ECWHA	1600 VDC	0.0010 to 0.047						○	Ammo	( )4

### ● Lead Spacing

Style	Lead Spacing
E	7.5 mm

### ■ Rating & Dimensions & Quantity / Ammo Box

● Rated voltage : 800 VDC, Capacitance tolerance : ±3 % (H)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty		
		L max	T max	H max			F	S		ød	Taping 7.5mm	Bulk
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)			
ECWH8103HA( )	0.010	15.4	5.4	9.8	14.8	14.8	12.5	7.5	12.5	0.6	500	500
ECWH8123HA( )	0.012	15.4	5.8	10.2	15.2	15.2	12.5	7.5	12.5	0.6		
ECWH8153HA( )	0.015	15.4	6.2	10.6	15.6	15.6	12.5	7.5	12.5	0.6		
ECWH8183HA( )	0.018	15.7	6.6	11.0	16.0	18.0	12.5	7.5	12.5	0.8		
ECWH8223HA( )	0.022	15.7	7.1	11.5	16.5	18.5	12.5	7.5	12.5	0.8	400	500
ECWH8273HA( )	0.027	15.7	7.6	12.0	17.0	19.0	12.5	7.5	12.5	0.8		
ECWH8333HA( )	0.033	15.7	8.4	12.8	17.8	19.8	12.5	7.5	12.5	0.8	300	500
ECWH8393HA( )	0.039	15.7	8.9	13.3	18.3	20.3	12.5	7.5	12.5	0.8		
ECWH8473HA( )	0.047	15.7	9.7	14.1	19.1	21.1	12.5	7.5	12.5	0.8		

↑ Suffix for lead crimped taped type  
 ↑ Capacitance tolerance code

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use. Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Rating & Dimensions & Quantity / Ammo Box

● Rated voltage : 1600 VDC, Capacitance tolerance : ±3 % (H), ±5 % (J)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty				
		L <sub>max</sub>	T <sub>max</sub>	H <sub>max</sub>			F	S		ød	Taping 7.5mm	Bulk Straight	Bulk Crim ped lead	
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)					
ECWHA3C102( )( )	0.0010	17.8	5.2		13.0	13.0		10.0	15.0	0.6	600			
ECWHA3C112( )( )	0.0011	17.8	5.4		13.1	13.1		10.0	15.0	0.6				
ECWHA3C122( )( )	0.0012	17.8	5.5		13.2	13.2		10.0	15.0	0.6	500			
ECWHA3C132( )( )	0.0013	17.8	5.7		13.4	13.4		10.0	15.0	0.6				
ECWHA3C152( )( )	0.0015	17.8	5.9		13.7	13.7		10.0	15.0	0.6				
ECWHA3C162( )( )	0.0016	17.8	6.1		13.9	13.9		10.0	15.0	0.6				
ECWHA3C182( )( )	0.0018	17.8	6.4		14.1	14.1		10.0	15.0	0.6				
ECWHA3C202( )( )	0.0020	17.8	6.6		14.3	14.3		10.0	15.0	0.6				
ECWHA3C222( )( )	0.0022	17.8	6.7		14.5	14.5		10.0	15.0	0.6	400			
ECWHA3C242( )( )	0.0024	17.8	7.0		14.7	14.7		10.0	15.0	0.6				
ECWHA3C272( )( )	0.0027	17.8	5.2		13.0	13.0		10.0	15.0	0.6	600	1000		
ECWHA3C302( )( )	0.0030	17.8	5.5		13.2	13.2		10.0	15.0	0.6				
ECWHA3C332( )( )	0.0033	17.8	5.6		13.4	13.4		10.0	15.0	0.6				
ECWHA3C362( )( )	0.0036	17.8	5.7		13.5	13.5		10.0	15.0	0.6				
ECWHA3C392( )( )	0.0039	17.8	6.0		13.8	13.8		10.0	15.0	0.6				
ECWHA3C432( )( )	0.0043	17.8	6.2		13.9	13.9		10.0	15.0	0.6				
ECWHA3C472( )( )	0.0047	17.8	6.4	9.1	14.1	14.1	15.0	10.0	15.0	0.6				
ECWHA3C512( )( )	0.0051	17.8	6.6	9.4	14.4	14.4	15.0	10.0	15.0	0.6				
ECWHA3C562( )( )	0.0056	17.8	6.8	9.6	14.6	14.6	15.0	10.0	15.0	0.6				
ECWHA3C622( )( )	0.0062	17.8	7.1	9.8	14.8	14.8	15.0	10.0	15.0	0.6				
ECWHA3C682( )( )	0.0068	17.8	6.1	12.1	17.1	17.1	15.0	10.0	15.0	0.6				
ECWHA3C752( )( )	0.0075	17.8	6.5	12.4	17.4	17.4	15.0	10.0	15.0	0.6				
ECWHA3C822( )( )	0.0082	17.8	6.8	12.7	17.7	17.7	15.0	10.0	15.0	0.6				
ECWHA3C912( )( )	0.0091	17.8	7.1	13.0	18.0	18.0	15.0	10.0	15.0	0.6				
ECWHA3C103( )( )	0.010	20.3	6.4	12.3	17.3	17.3	17.5	10.0	17.5	0.6				
ECWHA3C113( )( )	0.011	20.3	6.6	12.5	17.5	17.5	17.5	10.0	17.5	0.6				
ECWHA3C123( )( )	0.012	20.3	6.8	12.8	17.8	17.8	17.5	10.0	17.5	0.6				
ECWHA3C133( )( )	0.013	20.3	7.1	13.0	18.0	18.0	17.5	10.0	17.5	0.6				
ECWHA3C153( )( )	0.015	20.3	7.6	13.5	18.5	18.5	17.5	10.0	17.5	0.6				
ECWHA3C163( )( )	0.016	20.3	7.9	13.8	18.8	18.8	17.5	10.0	17.5	0.6				
ECWHA3C183( )( )	0.018	20.6	8.2	14.1	19.1	21.1	17.5	10.0	17.5	0.8				
ECWHA3C203( )( )	0.020	20.6	8.7	14.6	19.6	21.6	17.5	10.0	17.5	0.8				
ECWHA3C223( )( )	0.022	20.6	9.1	15.0	20.0	22.0	17.5	10.0	17.5	0.8				
ECWHA3C243( )( )	0.024	20.6	9.6	15.4	20.4	22.4	17.5	10.0	17.5	0.8				
ECWHA3C273( )( )	0.027	20.6	10.0	15.9	20.9	22.9	17.5	10.0	17.5	0.8				
ECWHA3C303( )( )	0.030	20.6	10.7	16.5	21.5	23.5	17.5	10.0	17.5	0.8				
ECWHA3C333( )( )	0.033	20.6	11.2	17.0	22.0	24.0	17.5	10.0	17.5	0.8				
ECWHA3C363( )( )	0.036	20.6	11.7	17.5	22.5	24.5	17.5	10.0	17.5	0.8				
ECWHA3C393( )( )	0.039	20.6	12.1	18.0	23.0	25.0	17.5	10.0	17.5	0.8				
ECWHA3C433( )( )	0.043	20.6	12.8	18.6	23.6	25.6	17.5	10.0	17.5	0.8				
ECWHA3C473( )( )	0.047	20.6	13.4	19.2	24.2	26.2	17.5	10.0	17.5	0.8				

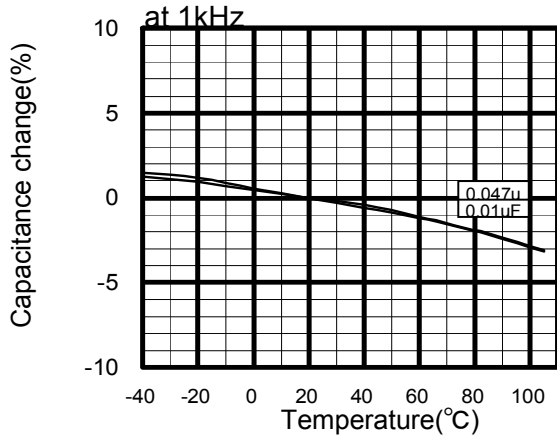
↑ Suffix for lead crimped taped type  
 ↑ Capacitance tolerance code



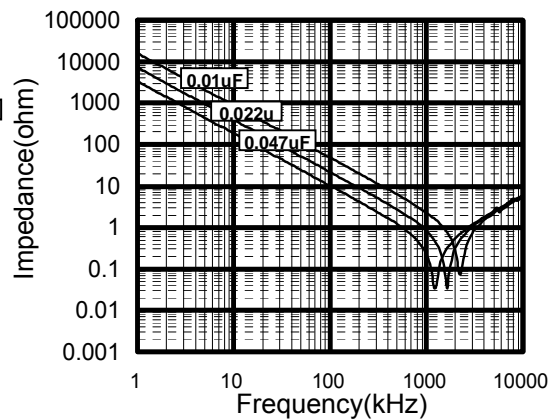
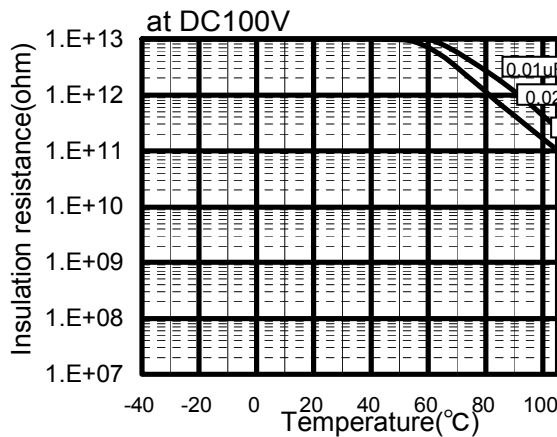
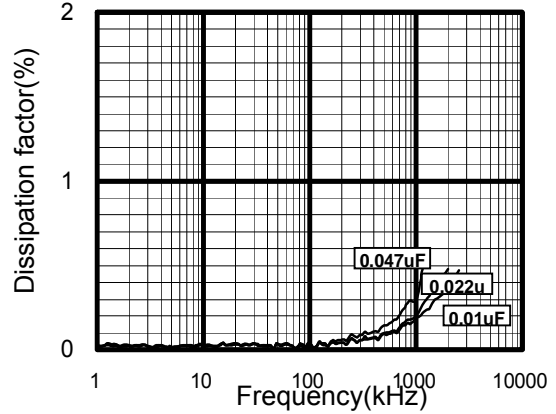
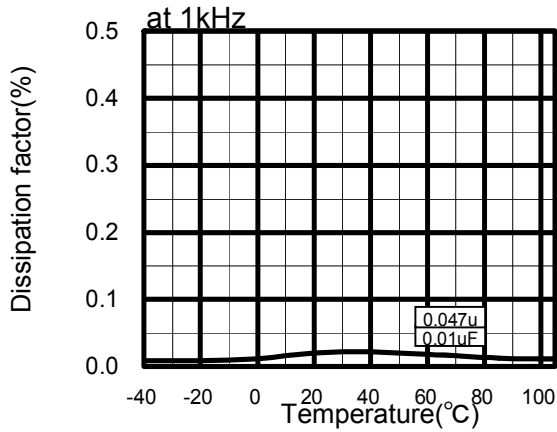
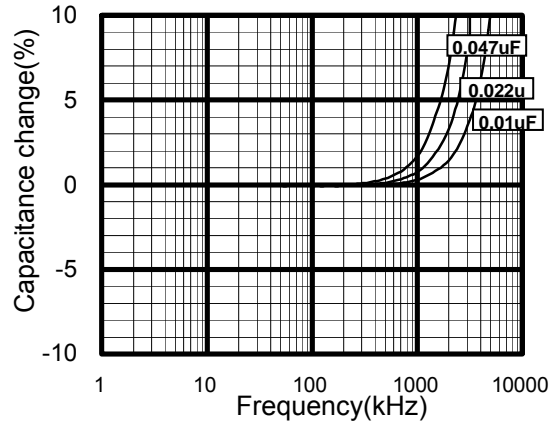
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**ECWH (A) Type DC800V series (Metallized Polypropylene Film)**  
**Electrical Characteristics <Typical Data >**

**Temperature Characteristics**

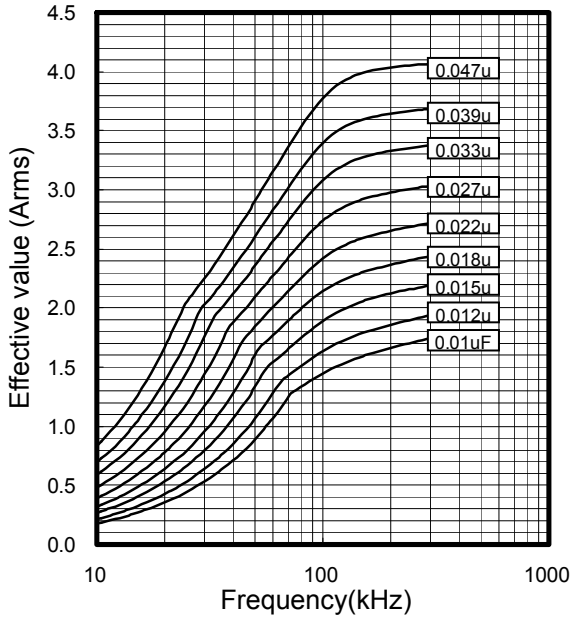


**Frequency Characteristics**

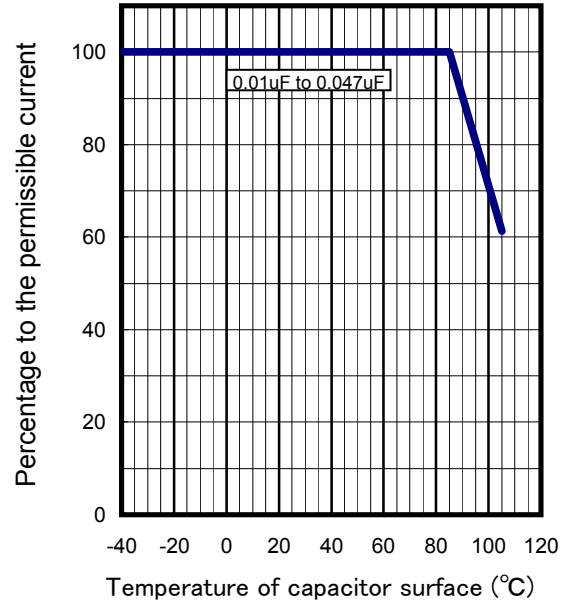


**ECWH (A) Type DC800V series (Metallized Polypropylene Film)**  
**Applicable Specifications**

**Permissible Current**



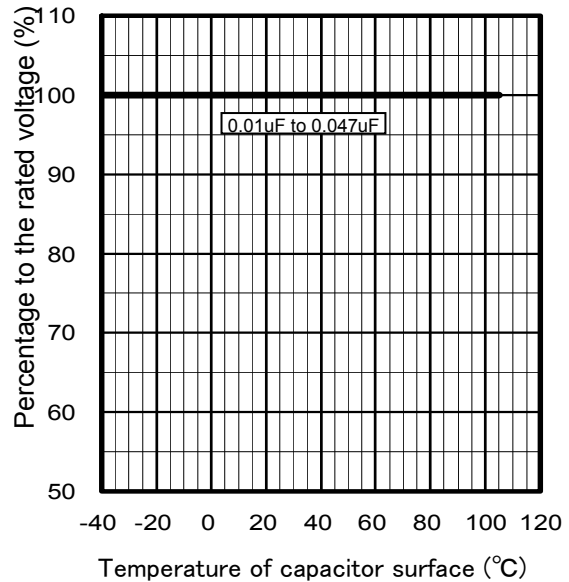
**Permissible Current Derating by Temperature**



**Pulse Handling Capability (dv/dt)**  
 (Max 10000cycles)

Rated Voltage	Capacitance (μF)	Code	dV/dt (V/μs)	Current (A0-P)
DC 800V	0.010	103	500	5.0
	0.012	123		6.0
	0.015	153		7.5
	0.018	183	1000	9.0
	0.022	223		22.0
	0.027	273		27.0
	0.033	333		33.0
	0.039	393		39.0
	0.047	473		47.0

**Voltage Derating by Temperature**

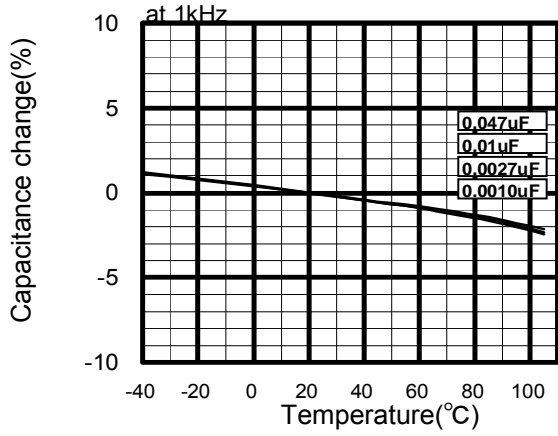


\*Please consult Panasonic if your condition exceeds the above  
 \*P When you use this product, peak voltage must not exceed DC rated voltage.  
 \*The current(0-P) value is calculated using nominal capacitance.

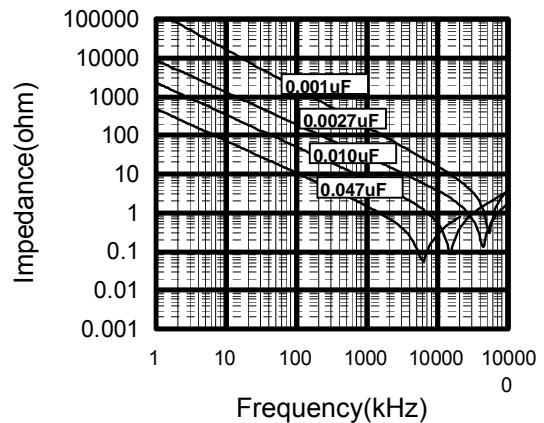
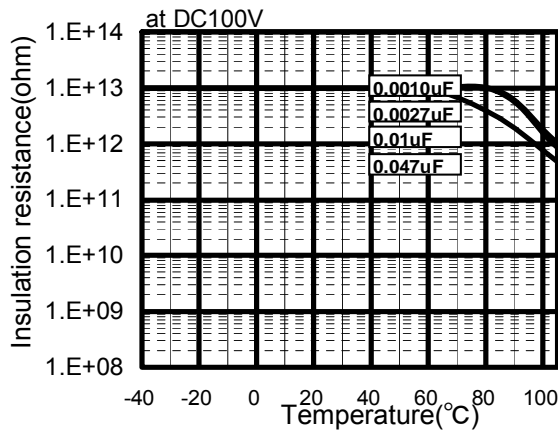
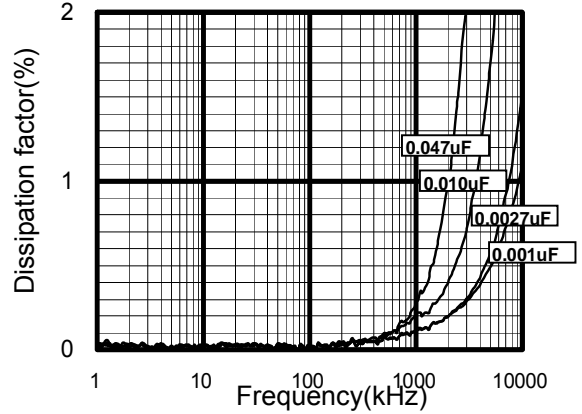
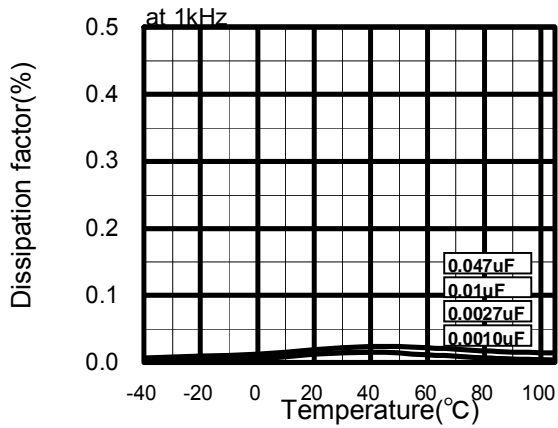
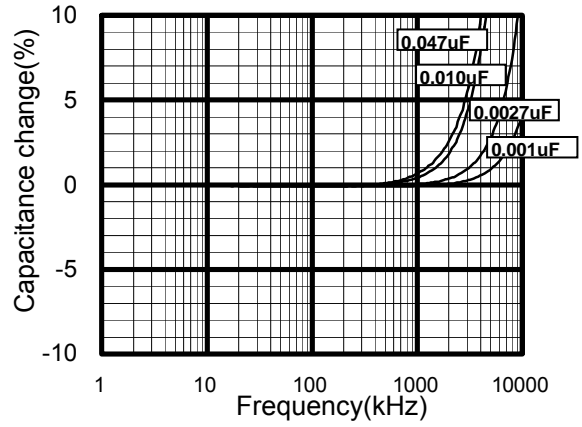
**ECWHA Type DC1600V series (Metallized Polypropylene Film)**

**Electrical Characteristics <Typical Data >**

**Temperature Characteristics**

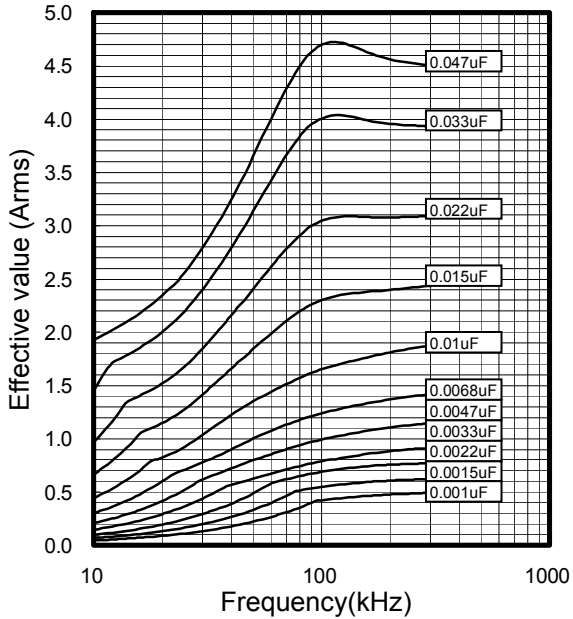


**Frequency Characteristics**

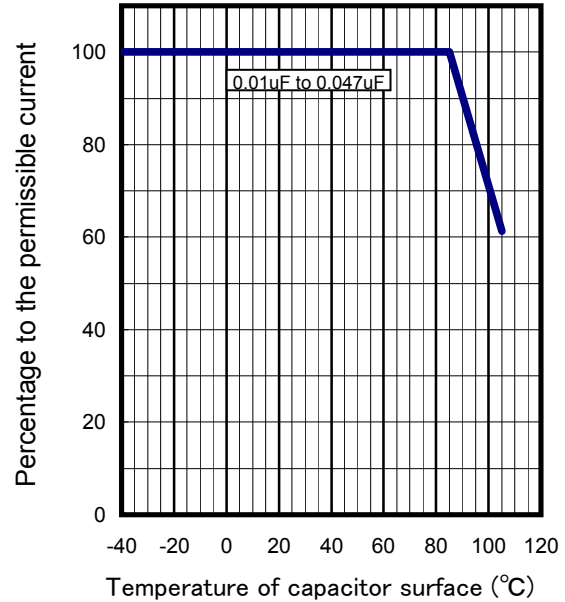


**ECWHA Type DC1600V series (Metallized Polypropylene Film)**  
**Applicable Specifications**

**Permissible Current**



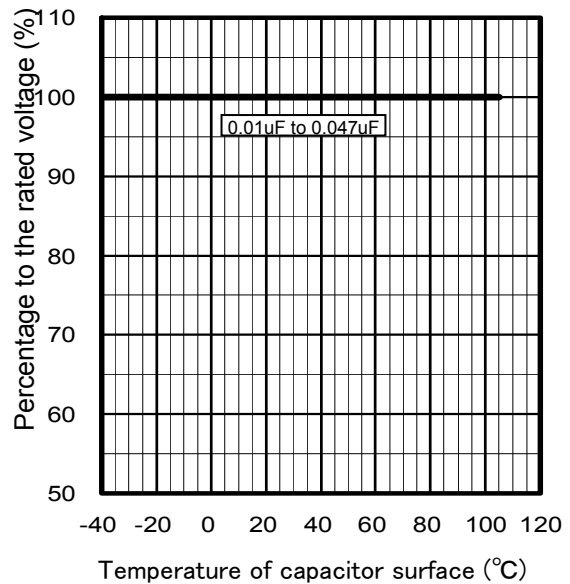
**Permissible Current Derating by Temperature**



**Pulse Handling Capability (dv/dt)**  
 (Max 10000cycles)

Rated Voltage	Capacitance (μF)	Code	dV/dt (V/μs)	Current (A0-P)
DC 1600V	0.0010	102	2000	2.0
	0.0015	152		3.0
	0.0022	222		4.4
	0.0033	332		6.6
	0.0047	472		9.4
	0.0068	682		13.6
	0.0100	103		20.0
	0.0150	153		30.0
	0.0220	223		44.0
	0.0330	333		66.0
0.0470	473	94.0		

**Voltage Derating by Temperature**



\*Please consult Panasonic if your condition exceeds the above  
 \*P When you use this product, peak voltage must not exceed DC rated voltage.  
 \*The current(0-P) value is calculated using nominal capacitance.